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Claims

1. Process for producing an electronic color information file for color communication, which file includes a data set describing the color impression of one or more color samples, whereby the at least one data set is made available in a processor and stored in a preselected data format in the color information file, so that all the information data associated with the color samples and identifying, characterizing or supplementing the color samples, are stored as information data containing data objects in an open, expandable, hierarchically organized object structure in the color information file.

2. Process according to claim 1, wherein each data object is labeled with a characterizing type description (tag) selected from a group of predefined type descriptions (tags), whereby the type description provides details on the structure and content of the data object, and the data type description (tag) of the data object is stored in the color information file in defined relation to the information data of the data object.

3. Process according to claim 1, wherein at least one data object itself includes one or more hierarchically subordinate data objects, whereby each subordinate data object is labeled with a characterizing type description (tag) selected from a predefined group of type descriptions [tags], whereby the type description provides details on the structure and content of the data object, the type description (tag) of the subordinate data object being stored in the color information file in defined relation to the information data of the subordinate data object.

4. Process according to claim 3, wherein a name is associated with the data object of the uppermost level of the hierarchy and/or the data objects respectively subordinate to a data object, which name defines the respective data objects and is stored in the color information file in defined relation to the respective data objects.

5. Process according to claim 3 or 4, wherein an explanatory description is associated with the

data object of the uppermost level of the hierarchy and/or the data objects respectively subordinate to a data object, which explanatory description defines the respective data objects and is stored in the color information file in defined relation to the respective data objects.

6. Process according to claim 1, wherein at least one data object includes a subordinate data object which represents a connection pointer (hyperlink) to another data object within or outside the color information file.

7. Process according to claim 1, wherein all data objects are stored in text format in the color information file.

8. Process according to claim 1, wherein at least one data object includes a binary data object as information data, whereby this binary data object is preferably stored in the color information file as symbols in MIME- compatible format.

9. Process according to claim 1, wherein the hierarchically organized object structure of the data objects is built on the basis of a page description language, especially the Extensible Markup Language (XML).

10. Process according to claim 2 or 3, wherein the step of storing of the information data which are associated with the color sample or color samples and identify, characterize or complement the color sample or samples is carried out by arbitrarily selecting from a predefined group of data object types.

11. Process according to claim 10, wherein the predefined group of data object types can be expanded with additional data object types.

12. Process according to claim 10, wherein the predefined group of data object types includes at least data objects for spectral data and colorimetric data (color vectors), and optionally device dependent color data.

13. Process according to claim 12, wherein the predefined group of data object types additionally includes data objects for further information data relevant for the visual impression of the color.

14. Process according to claim 12, wherein the predefined group of data object types additionally includes data objects for ICC profiles, measurement conditions, light source data and device profiles.

15. Process according to claim 12, wherein the predefined group of data object types additionally includes data objects for image data.

16. Process according to claim 12, wherein the predefined group of data object types additionally includes data objects for image data and/or substrate describing data, whereby the image data preferably represent structure information such as surface condition or graininess of the color samples to be communicated.

17. Process according to claim 12, wherein the predefined group of data object types additionally includes data objects for supplementary data representable in text format.

18. Process according to claim 1, wherein any combination of emission, remission and transmission spectra and/or colorimetric data (color vectors) are stored in the color information file.

19. Process according to claim 18, wherein emission spectra of an illumination light source and remission spectra of the color samples are stored in the color information file so that the illumination light source can be taken into consideration by way of a color model for the visual representation of the color samples on a screen.

20. Process according to claim 14, wherein an input profile and preferably several output profiles are assigned to a color sample and stored in the color information file, which input profile is used to recalculate a color sample from a device dependent color space into a device independent color space, and which output profiles are used to recalculate the color location of the color sample

from the device independent color space into a selected device dependent color space and to display the color location therein.

21. Process for communicating the information relevant for visual color impression of a color sample set including at least one color sample, whereby the information represented by measured data and/or manually produced value data is stored at a transmitter end in a color information file, the color information file is transferred to a receiver by way of a communication medium and at the receiver end again displayed in visual form, all the information data associated with the color samples and identifying, characterizing or supplementing the color samples, being stored as information data containing data objects in an open, expandable, hierarchically organized object structure in the color information file.

22. Communication process according to claim 21, wherein each data object is labeled with a characterizing type description (tag) selected from a group of predefined type descriptions (tags), whereby the type description provides details on the structure and content of the data object, and the data type description (tag) of the data object is stored in the color information file in defined relation to the information data of the data object.

23. Communication process according to claim 21, wherein at least one data object itself includes one or more hierarchically subordinate data objects, whereby each subordinate data object is labeled with a characterizing type description (tag) selected from a predefined group of type descriptions [tags], whereby the type description provides details on the structure and content of the data object, the type description (tag) of the subordinate data object being stored in the color information file in defined relation to the information data of the subordinate data object.

24. Communication process according to claim 21, wherein a name is associated with the data object of the uppermost level of the hierarchy and/or the data objects respectively subordinate to a data object, which name defines the respective data objects and is stored in the color information file in defined relation to the respective data objects.

25. Communication process according to claim 21, wherein an explanatory description is

associated with the data object of the uppermost level of the hierarchy and/or the data objects respectively subordinate to a data object, which explanatory description defines the respective data objects and is stored in the color information file in defined relation to the respective data objects.

26. Communication process according to claim 21, wherein at least one data object includes a subordinate data object which represents a connection pointer (hyperlink) to another data object within or outside the color information file.

27. Communication process according to claim 21, wherein all data objects are stored in text format in the color information file.

28. Communication process according to claim 21, wherein at least one data object includes a binary data object as information data, whereby this binary data object is preferably stored in the color information file as symbols in MIME- compatible format.

29. Communication process according to claim 21, wherein the hierarchically organized object structure of the data objects is built on the basis of a page description language, especially the Extensible Markup Language (XML).

30. Communication process according to claim 22, wherein a predefined amount of data object types is made available, which define the type and structure of typical information data identifying, characterizing or supplementing a color sample, an arbitrary selection of data object types from the predefined amount of data object types or an arbitrary combination of these data object types being used for storage of the information data assigned to the color sample or color samples and identifying, characterizing or supplementing the color samples.

31. Communication process according to claim 30, wherein the predefined group of data object types includes at least data objects for spectral data and colorimetric data (color vectors), and optionally device dependent color data.

32. Communication process according to claim 30, wherein the predefined group of data object types additionally includes data objects for further information data relevant for the visual impression of the color.

33. Communication process according to claim 30, wherein the predefined group of data object types additionally includes data objects for ICC profiles, measurement conditions, light source data and device profiles.

34. Communication process according to claim 30, wherein the predefined group of data object types additionally includes data objects for image data.

35. Communication process according to claim 30, wherein the predefined group of data object types additionally includes data objects for image data and/or substrate describing data, whereby the image data preferably represent structure information such as surface condition or graininess of the color samples to be communicated.

36. Communication process according to claim 30, wherein any combination of emission, remission and transmission spectra and/or colorimetric data (color vectors) are stored in the color information file.

37. Communication process according to claim 36, wherein emission spectra of an illumination light source and remission spectra of the color samples are stored in the color information file, and at the receiving end the illumination light source is taken into consideration by way of a color model and the stored emission spectra for the visual representation of the color samples on a screen.

38. Communication process according to claim 31, characterized in that an input profile and preferably several output profiles are assigned to a color sample and stored in the color information file, that the color sample is recalculated from a device dependent color space into a device independent color space, and that the color location of the color sample is recalculated by way of the output profiles from this device independent color space into a selected device dependent color space and displayed therein.